

Preliminary Air Monitoring Summary

CR-251 Event

Prepared On Behalf Of: Colonial Pipeline

Prepared By:

Center for Toxicology and Environmental Health, L.L.C.

5120 Northshore Drive

Little Rock, AR 72118

501-801-8500

www.CTEH.com

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Introduction

On October 31, 2016, the Center for Toxicology and Environmental Health (CTEH®) was contacted by Colonial Pipeline to initiate air monitoring for gasoline, its constituents, and combustion products. This submittal summarizes real-time air monitoring data recorded by CTEH® personnel between 11/01/2016 06:00 CST and 11/02/2016 06:00 CST in accordance with the CTEH® Air Sampling and Analysis Plan. Please note that all real-time data in this report has not undergone full QA/QC (quality assurance/quality control) analysis. It has been provided expeditiously to on-site contractors for informational purposes only.

Manually-Logged Real-Time Air Monitoring

Real-time air monitoring was conducted to evaluate the potential airborne presence of gasoline-associated constituents, if any, during response operations. All instrumentation was calibrated at least once per day or per manufacturer's recommendations. Target analytes were measured as total volatile organic compounds (VOCs), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM_{2.5}), and VOCs using hand-held instruments such as RAESystems® MultiRAE Pro/Plus as well as Gastec® colorimetric detection tubes.

Exceedances of PM_{2.5} actions levels were observed following commencement of woodland fire suppression operations adjacent to the site at 17:30 on Nov 1, which generated visibly-increased amounts of wood fire smoke.

Table 1 summarizes the manually-logged real-time air monitoring readings. Maps depicting the site and locations of recorded readings are available in **Attachment 1**.

Table 1: Summary of Manually-Logged Real-Time Air Monitoring Results¹
November 1, 2016 06:00 PDT – November 2, 2016 06:00 CST

Location	Analyte	Number of Readings	Number of Detections	Concentration Range ^{2,3}	Health Based Action Level
Community	Carbon Monoxide (CO)	97	0	< 1 ppm	12 ppm
	Formaldehyde	13	0	< 0.05 ppm	1 ppm
	LEL	5	0	< 1 %	3 ppm
	Naphthalene	1	0	< 0.05 ppm	10 ppm
	Nitrogen Dioxide (NO ₂)	81	1	0.2 ppm	1 ppm
	PM _{2.5}	106	106	0.011 – 2.13 mg/m ³	0.138 mg/m ³
	Sulfur Dioxide (SO ₂)	88	0	< 0.1 ppm	0.3 ppm
Worker Exposure	VOCs	101	1	0.2 ppm	100 ppm
	Benzene	1	0	< 0.05 ppm	0.5 ppm
	Carbon Monoxide (CO)	13	5	3 – 6 ppm	25 ppm
	LEL	36	0	< 1 %	3 ppm
	Nitrogen Dioxide (NO ₂)	27	0	< 0.1 ppm	0.2 ppm
	PM _{2.5}	42	42	0.038 – 8.56 mg/m ³	0.351 mg/m ³
	Sulfur Dioxide (SO ₂)	36	0	< 0.1 ppm	0.25 ppm
	VOCs	38	15	0.1 – 2.2 ppm	300 ppm

¹Please Note: The data displayed in the above table has not undergone complete QC analysis and is presented in a preliminary format.

²Maximum detections preceded by the "<" symbol are considered non-detections below the instrument limit of detection (LoD) value to the right.

³Numbers are the raw values, no correction factors have been applied.

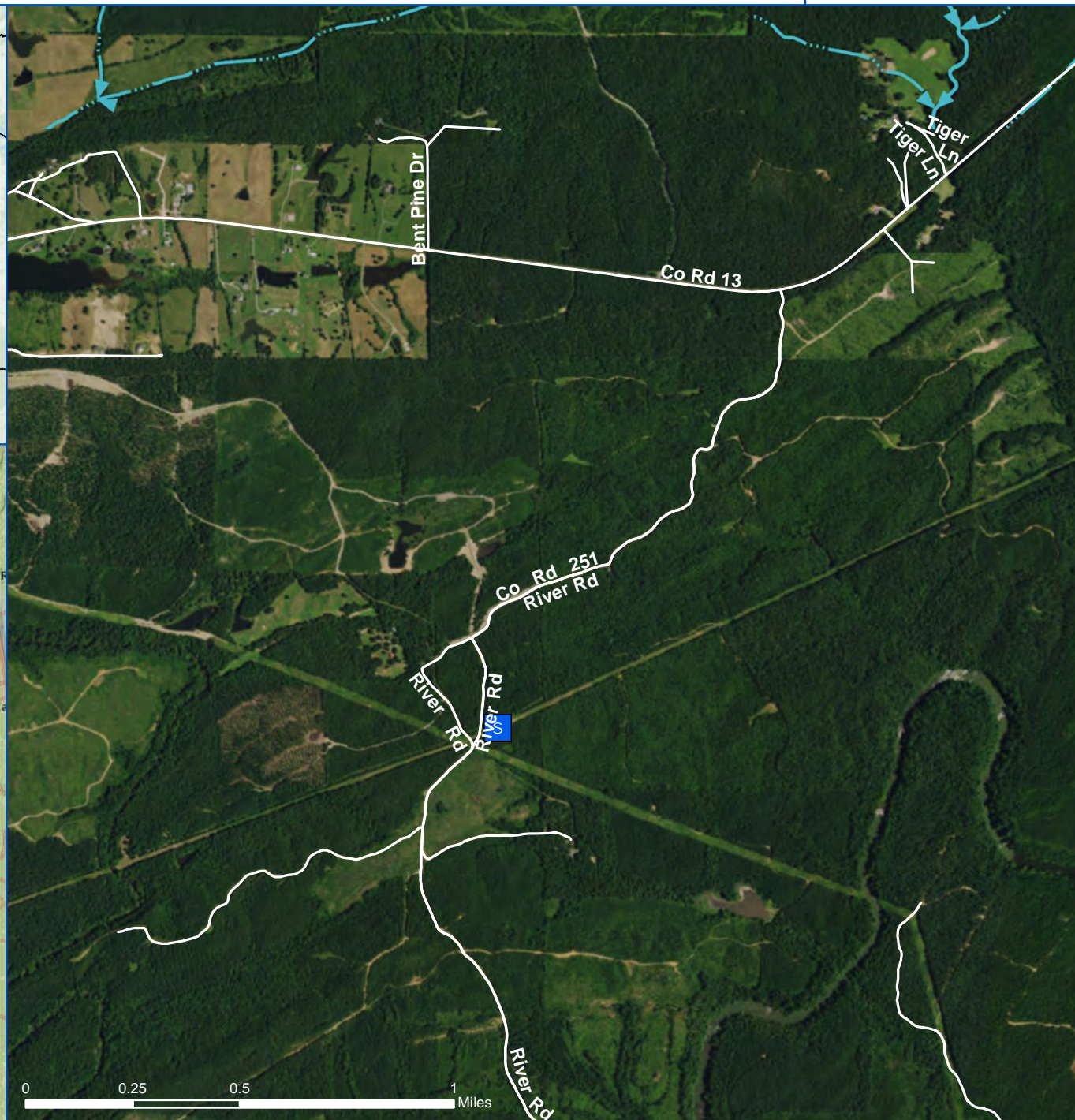
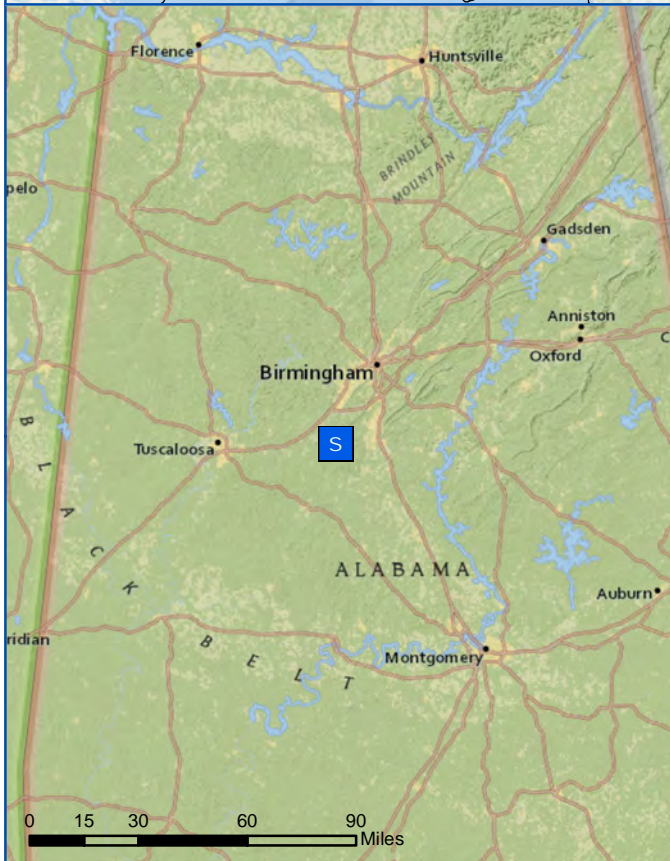
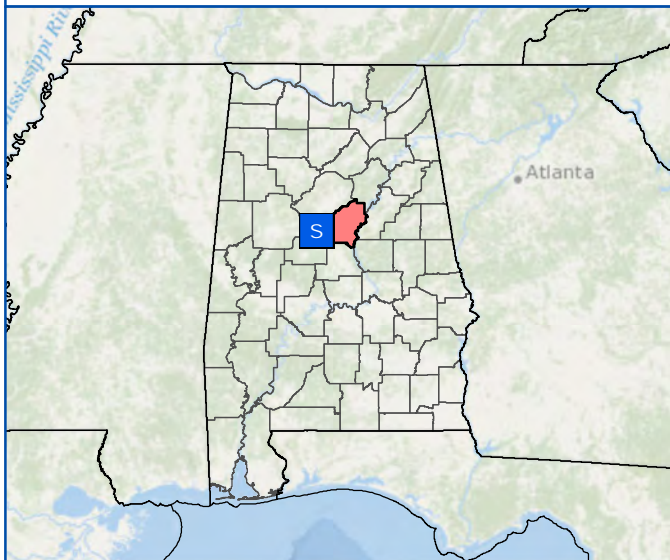
Weather Conditions

Weather conditions were acquired from the National Weather Service meteorological station located at the Bessemer Airport (KEY). Wind direction for the report period was predominantly from the SE at 3.5 – 11.5 mph. A wind rose depicting wind speed and direction is available in **Attachment 2**.

Table 3: Weather Conditions for Report Period

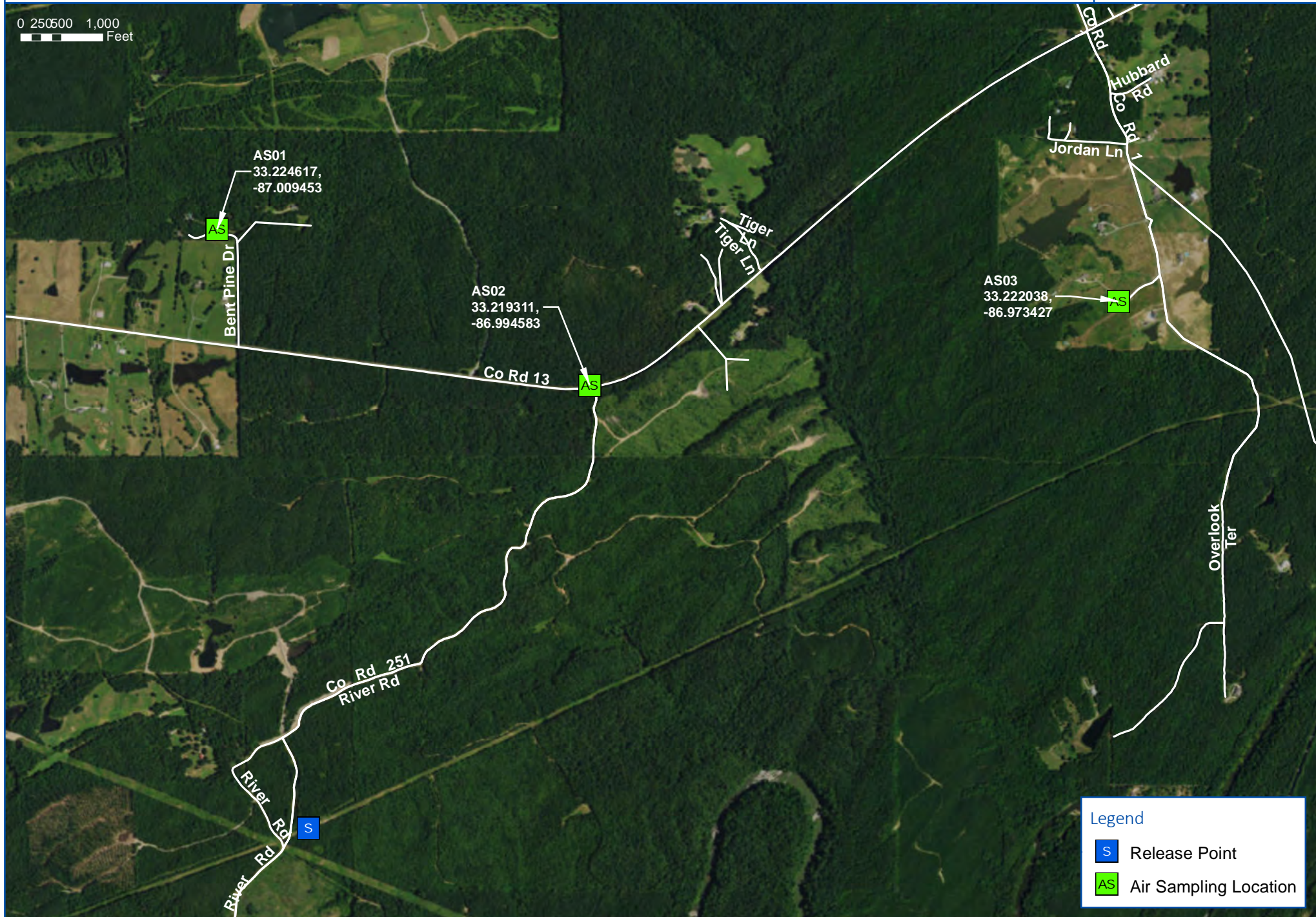
Observation	Range	Average
Relative Humidity	32 - 81 %	57 %
Temperature	60.1 – 86.0 °F	71.3 °F
Pressure	30.13 – 30.35 inHg	30.22 inHg

Attachment 1: Site Maps





0 250 500 1,000
Feet



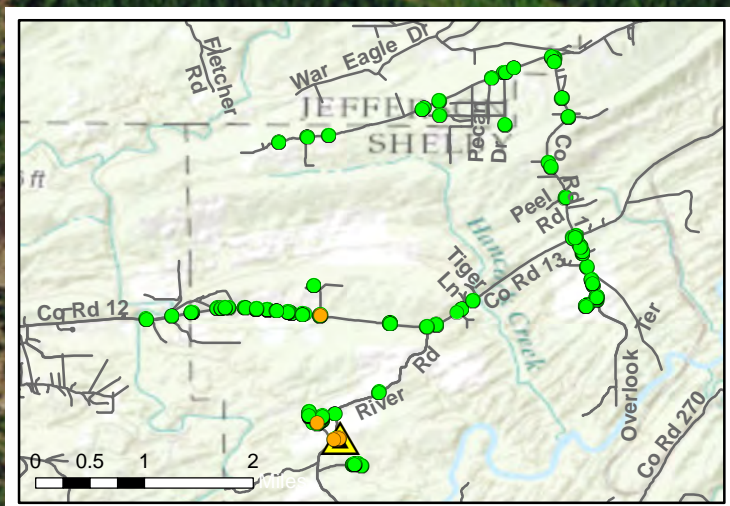
Legend

- Release Point
- Air Sampling Location

Legend

- AS Air Sampling Location
- ▲ Release Location
- Real-Time Monitoring Location
- Real-Time Monitoring Detection

0 125 250 500 Feet



VOC (0.2 ppm)
11/1/2016 6:41:59 PM

CO (6 ppm)
11/1/2016 11:32:36 AM

VOC (0.2 ppm)
11/1/2016 11:30:32 AM
VOC (0.7 ppm)
11/1/2016 6:02:17 PM

CO (3 ppm)
11/1/2016 10:33:27 AM
VOC (0.2 ppm)
11/1/2016 5:47:04 PM
VOC (2.2 ppm)
11/1/2016 7:42:37 PM
VOC (0.1 ppm)
11/1/2016 3:31:24 PM

VOC (1 ppm)
11/1/2016 6:18:03 PM
VOC (0.5 ppm)
11/1/2016 3:44:23 PM

VOC (0.6 ppm)
11/1/2016 11:15:20 AM
VOC (0.2 ppm)
11/1/2016 10:32:25 AM
CO (4 ppm)
11/1/2016 11:18:13 AM
VOC (0.5 ppm)
11/1/2016 9:24:03 PM
VOC (1.3 ppm)
11/2/2016 1:27:09 AM
CO (3 ppm)
11/1/2016 10:56:02 AM
VOC (0.2 ppm)
11/1/2016 10:31:00 AM
VOC (0.3 ppm)
11/1/2016 10:04:04 AM
VOC (0.3 ppm)
11/1/2016 10:53:43 AM
CO (5 ppm)
11/1/2016 12:05:25 PM
VOC (0.3 ppm)
11/1/2016 6:40:59 PM



Attachment 2: Weather Conditions

Weather Station: KEKY 2016-11-01 to 2016-11-02

